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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,388	07/26/2001	Takao Kawasaki	040679-1315	8034

7590 06/04/2002

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EXAMINER

O BRIEN, SEAN D

ART UNIT

PAPER NUMBER

3748

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,388

Applicant(s)

KAWASAKI ET AL.

Examiner

Sean D. O'Brien

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,18-20,34,37,42-44,48 and 49 is/are rejected.
- 7) ☒ Claim(s) 3-17, 21-33, 35, 36, 38-41, 45-47 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 2, 18, 19, 20, 34, 37, 42, 43, 44, 48, 49 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,328,007 to Hirasawa et al.
3. Regarding claim 1: Hirasawa discloses a control apparatus configured to calculate a target air quantity (column 4, lines 22-24), an estimated internal EGR quantity (column 5, lines 41-45), a target intake valve closing time (column 4, lines 22-24), and controlling actual intake air quantity by controlling actual intake valve closing timing (column 4, lines 22-24).
4. Regarding claim 2: Hirasawa discloses where estimated internal EGR is calculated in accordance with a target exhaust valve closing timing (column 5, lines 41-53).
5. Regarding claim 18: Hirasawa discloses where the valve actuator comprises a solenoid (column 3, 39-40).
6. Regarding claim 19: Hirasawa discloses a method comprising obtaining information on exhaust valve closing timing, intake valve opening timing and engine speed (claim 5), and calculating an estimated EGR quantity (claim 5, where the fresh air quantity is calculated, which also will give the EGR quantity).

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7. Regarding claim 20: Hirasawa discloses a method of using a target exhaust valve closing timing for calculating the estimated internal EGR (column 4 lines 32-34, where controlled timing implies a target, and claim 5, where the fresh air quantity is calculated, which also will give the EGR quantity).
8. Regarding claim 34: Hirasawa discloses a method comprising calculating an intake air quantity in accordance with the estimated EGR quantity (column 5, lines 41-60).
9. Regarding claim 37: Hirasawa discloses a method of controlling the engine in accordance with the estimated internal EGR quantity (column 2 lines 13-19).
10. Regarding claim 42: Hirasawa discloses an internal EGR quantity estimating section (claim 5, where the fresh air quantity is calculated, which also will give the EGR quantity).
11. Regarding claim 43: Hirasawa discloses a cylinder intake air quantity estimating apparatus (claim 5).
12. Regarding claim 44: Hirasawa discloses controlling the engine in accordance with the estimated internal EGR quantity (column 2 lines 13-19).
13. Regarding claim 48: Hirasawa discloses a means for collecting information on exhaust valve closing timing, intake valve opening timing (claim 5) and engine speed (column 4, line 10), and a means for calculating the estimated EGR based on said information (claim 5, where the fresh air quantity is calculated, which also will give the EGR quantity).
14. Regarding claim 49: Hirasawa discloses a means whereby an engine operating parameter (fuel injection quantity from claim 11) is controlled based on estimated EGR (intake air quantity from claim 1, as calculated in claim 5 which will also give EGR quantity).

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Allowable Subject Matter

15. Claims 3-17, 21-33, 35, 36, 38-41, 45-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

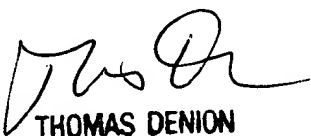
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean D. O'Brien whose telephone number is 703-306-3476. The examiner can normally be reached on M-Th 7:30-5:00, 2nd Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom E. Denion can be reached on 703-308-2326. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



Sean O'Brien, Patent Examiner
June 3, 2002



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700